



No effort has been made in this Operators' Instruction Book to describe the application of the machine to the many classes of office accounting.

The important parts of the Bookkeeping Machine have been illustrated, their purpose briefly outlined and their method of operation described. We believe that Bookkeeping Machine operators will find this book very valuable for reference purposes, and that it will help them obtain a better understanding of the machine.

Remember that "Underwood Service" means the co-operation of our many branches with Underwood Bookkeeping Machine owners and operators.

These instructions were written on the presumption that the operator is familiar with the normal functions of a typewriter.

***ALWAYS TURN OFF ELECTRIC  
CURRENT WHEN MACHINE IS  
NOT IN USE.***





UNDERWOOD BOOKKEEPING MACHINE



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No. ....

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Underwood Typewriter Company, Inc.

Loaned to Bookkeeping Machine Owners to  
Assist their Operators in Becoming more  
Familiar with the Underwood Bookkeeping  
Machine.

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## SECTION I

### INSERTION OF PAPER

Speed in inserting and removing the paper is an important item in the day's work. By depressing the Feed Roll Release Lever (Plate 2, Figure 7) to its full depth, the paper feed rolls are relieved of their pressure against the platen or cylinder. The sheet of paper may then be inserted and pushed around the cylinder. After properly aligning the paper, return the Feed Roll Release Lever to its original position. Turn either cylinder knob until the writing is just above the top edge of Cylinder Scale. The printing point is directly behind the notch in the Type Bar Guide.

Depressing the Feed Roll Release Lever frees the paper from contact with the feed rolls and it can then be withdrawn easily.

It is improper to insert or remove paper by twirling the Cylinder Knobs.

### NUMERAL KEYS

The bank of numeral keys is complete in itself, having all of the ten digits. The numerals 1 and 0 must be used at all times to write figures.

These keys have the normal typewriter action and uniform touch. For protection against faulty operation, they are locked while a Tabular Key or the Back Space Key is depressed and during the period when the actuating mechanism is operating. When one of these keys is depressed, all the other numeral keys are locked.

If, at any time, a numeral key remains depressed, it indicates that the key was not operated properly. To release, simply depress to its full depth. If the carriage has escaped, back space once and depress key fully.



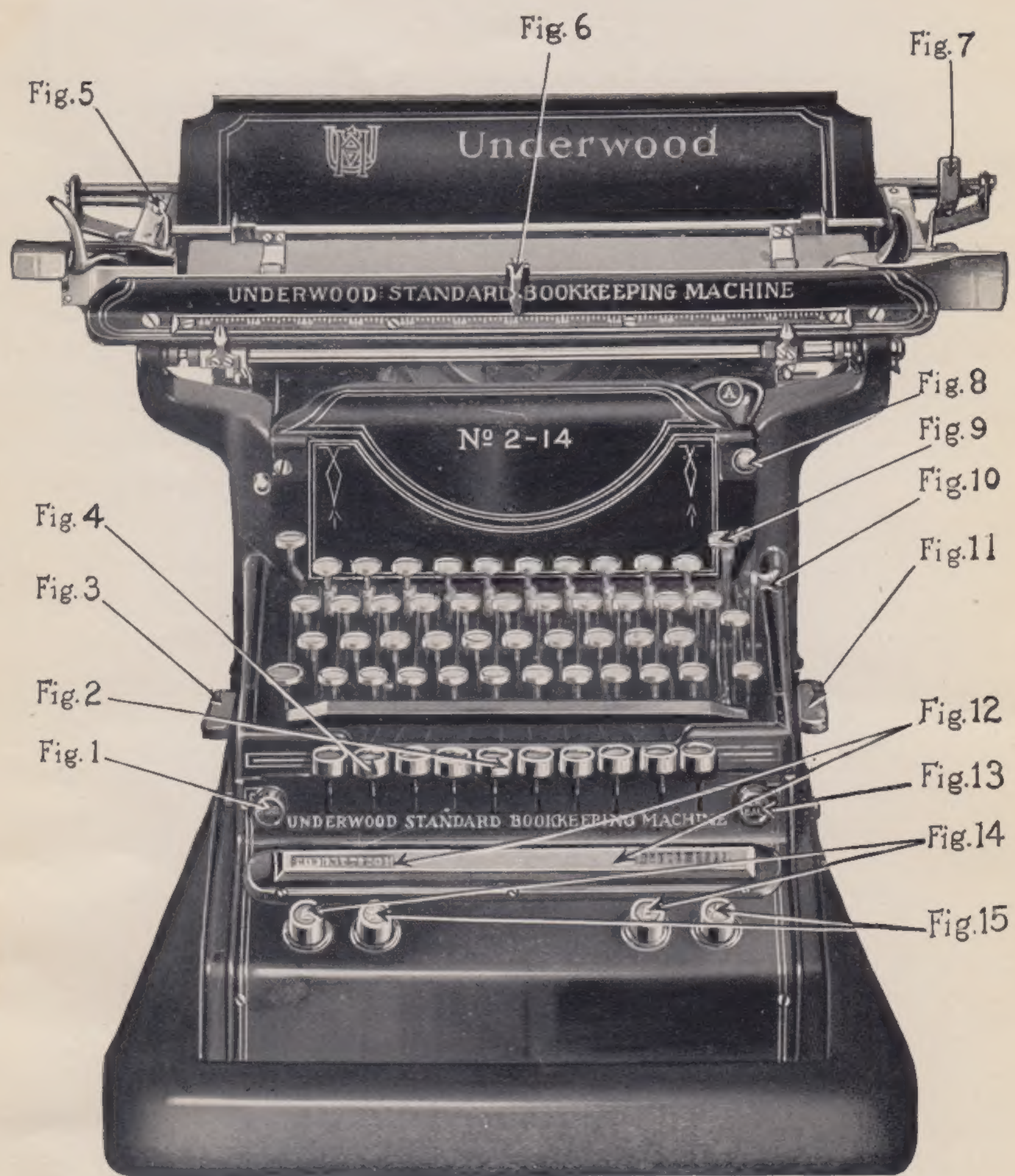


PLATE 2



## DECIMAL TABULATOR

A ten-key Decimal Tabulator (Plate 2, Figure 2) is located on the frame of the machine below the keyboard. Depressing the proper Tabulator Key permits the Carriage to move instantly to any predetermined point on the writing line.

The operation of the Decimal Tabulator differs from the operation of the regular keyboard in that the Tabulator Keys must be depressed full depth and held firmly until the Carriage has come to a full stop.

The second key (from the left) is the Decimal-Point or Column Selector Set Key (Plate 2, Figure 4), from which all calculations must be made. After the Tabulator Stops have been set, as explained in Section IV, a little practice is all that is necessary for one to become proficient in the art of operating this device.

## SECTION II

### REGISTERS

The Registers (Plate 2, Figure 12) are located in the front of the machine, below the Tabular Keys, and show the totals of amounts accumulated or computed.

When an amount is being written no part of it is accumulated in the Register or Registers until the last figure has been written.

There are two kinds of Registers—Quantity and Money. Each kind shows two ways in which figures may be written and computed (see next page).

It is possible to compute quantities in a Money Register by the use of a whole number stop (see Section No. 3).



	Register Wheels	Minimum spaces between Stops	Minimum Width of Computing Columns
<i>Money</i>	9 999 999 99	13	1-3/10 inch
<i>Registers</i>	999 999 99	11	1-1/10 "
	99 999 99	10	1 "
	9 999 99	9	0-9/10 "
	999 99	7	0-7/10 "
<i>Solid</i>	9999999 99	11	1-1/10 "
<i>Money</i>	999999 99	10	1 "
<i>Registers</i>	99999 99	9	0-9/10 "
	9999 99	8	0-8/10 "
	999 99	7	0-7/10 "
<i>Quantity</i>	999 999 999	12	1-2/10 "
<i>Registers</i>	99 999 999	11	1-1/10 "
	9 999 999	10	1 "
	999 999	8	0-8/10 "
	99 999	7	0-7/10 "
<i>Solid</i>	9999999999	10	1 "
<i>Quantity</i>	999999999	9	0-9/10 "
<i>Registers</i>	9999999	8	0-8/10 "
	999999	7	0-7/10 "
	99999	6	0-6/10 "

It is always safe to figure on the above spaces for Register capacity, but it is much better to allow an extra space where the width of columns will permit.

The Standard Register contains nine wheels (9 999 999 99) with punctuation spaces between Dollars and Cents, between Hundreds and Thousands, and between Thousands and Millions.

The position of the Register on the machine determines its number.

On a One-Register machine the Register is located in the center and is known as Number Two.



On a Two-Register machine one Register is located at the left and is known as Number One; the other is located at the right and is known as Number Three.

On a Three-Register machine the Register at the left is Number One, the one in the center is Number Two, and the one at the right is Number Three.

ONE-REGISTER MACHINE  
No. 2

TWO-REGISTER MACHINE  
No. 1 No. 3

THREE-REGISTER MACHINE  
No. 1 No. 2 No. 3

On machines having more than three Registers the numbers follow in rotation.

SECTION III  
TABULAR STOPS



PLATE 3

Ordinary Tabular Stop (Copper)	Addition Stop (Nickel)	Red Subtrac- tion Stop (Copper)	Black Subtrac- tion Stop (Black)	Whole Number Stop (Copper and Nickel)
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The use of the stops illustrated above is as follows:

*Ordinary Tabular Stop (Copper)*

For tabulating to Item, Folio, Order Number, Name, Address, Department, or other descriptive columns where no adding or subtracting is to be done.

*Addition Stop (Nickel)*

For tabulating to any column or position where addition is required, such as Debit or Charge column and Old Balance column in Ledger Posting and Statement Writing, Amount column in Billing, etc.



<i>Red Subtraction Stop (Copper)</i>	For tabulating to any column or position where Subtraction is required, such as Credit Column in Ledger Posting, Credit Column in Statement Writing, etc.
<i>Black Subtraction Stop (Black)</i>	For tabulating to any column or position where Subtraction is required and the amount must be printed in black, such as the Balance columns in Ledger Posting and Statement Writing, the Total Column in Billing, etc.
<i>Whole Number Stop (Copper and Nickel)</i>	For tabulating to any column or position where addition of quantities is required and it is not desirable to change the stock equipment of a Money Register to quantity.

## SECTION IV

### TO SET TABULAR STOPS

#### *Ordinary Tabular Stop*

1. Power must be shut off, black button down (Plate 5, Figure 1).
2. Space Carriage to writing position.
3. Note number at Pointer on Front Scale. (Plate 2, Figure 6).
4. Place ordinary Tabular Stop (Copper) in rear of Paper Table and below Rear Scale so that the long side of Stop (Plate 3) registers under corresponding number of Rear Scale.
5. Make Stop secure by pushing in as far as possible.

#### *To Find Decimal Point Position of Computing Columns*

1. In case of ruled columns space Carriage to bring vertical line, at RIGHT of column, to the printing point.
2. Space Carriage back three spaces with Back Space Key.
3. If columns are wide space back four spaces. (See table, Section II, governing width of columns and number of Register Wheels.)

#### *Addition Stop (Nickel)*

Find Decimal Point Position in column and set as directed for ordinary tabular stop.

#### *Subtraction Stop (Copper or Black)*

Find Decimal Point Position in column and set the proper Stop as directed for ordinary tabular stop.



### *Whole Number Stop*

Find **Decimal Point Position** of whole number in the column and set stop in that position as directed for ordinary tabular stop. This will make the amount register in the machine as soon as the unit figure is typewritten even though the register is a **Money Register**.

Extreme care must be exercised in setting Stops for all computing columns. The Register capacity of the machine controls this operation. At least the minimum number of spaces as outlined in the table, referred to on Page No. 8, must separate Tabular Stops (decimal point positions).

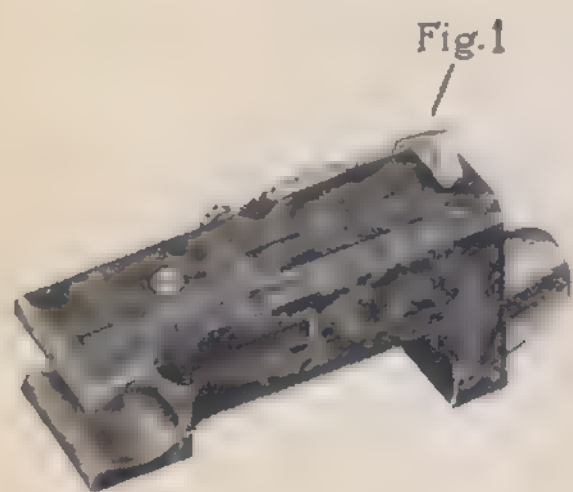
Under no circumstances should the arm of a Subtraction Stop be allowed to touch or overlap another Stop. At least one space should separate them.

## SECTION V

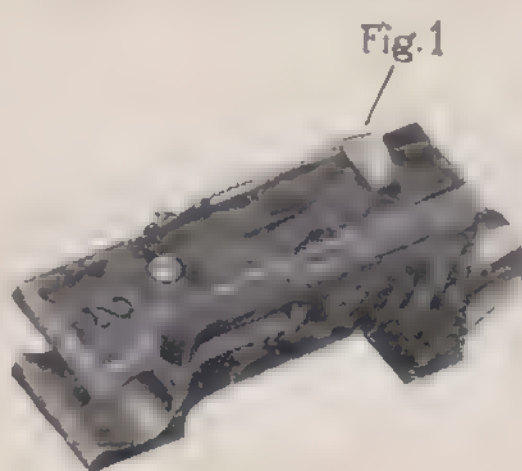
### COLUMN SELECTOR LEVER BRACKETS

Column Selector Lever Brackets (Plate 8, Figures 1, 2, 3) are the media through which the various wheels in the Registers are affected. They are located at the back of the machine, directly behind the Paper Table, in the same relative positions as their corresponding Registers, and are designated by the same number (Pages 8 and 9).

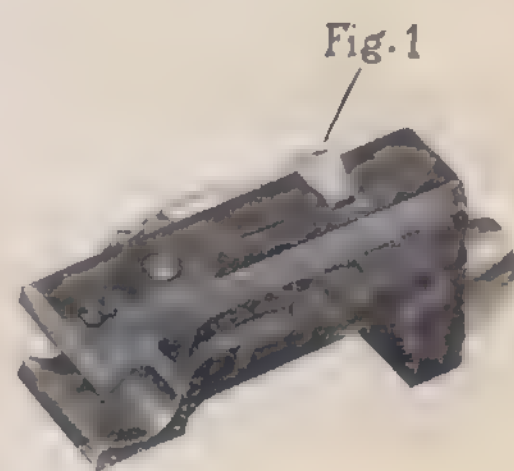
## SECTION VI



No. 1. Selector



No. 2. Selector



No. 3. Selector

### COLUMN SELECTORS

#### PLATE 4

Column Selectors are required for computing-columns **ONLY**, are marked with number, and operate in the Register and Selector Bracket bearing a similar number.

A Number One Column Selector will not operate in a Register or Selector Bracket numbered Three, nor will a Number Three Selector operate in a Register or Selector Bracket numbered One.

Each Register requires a Column Selector for every column in which computation is to be shown by that Register (Plate 8).



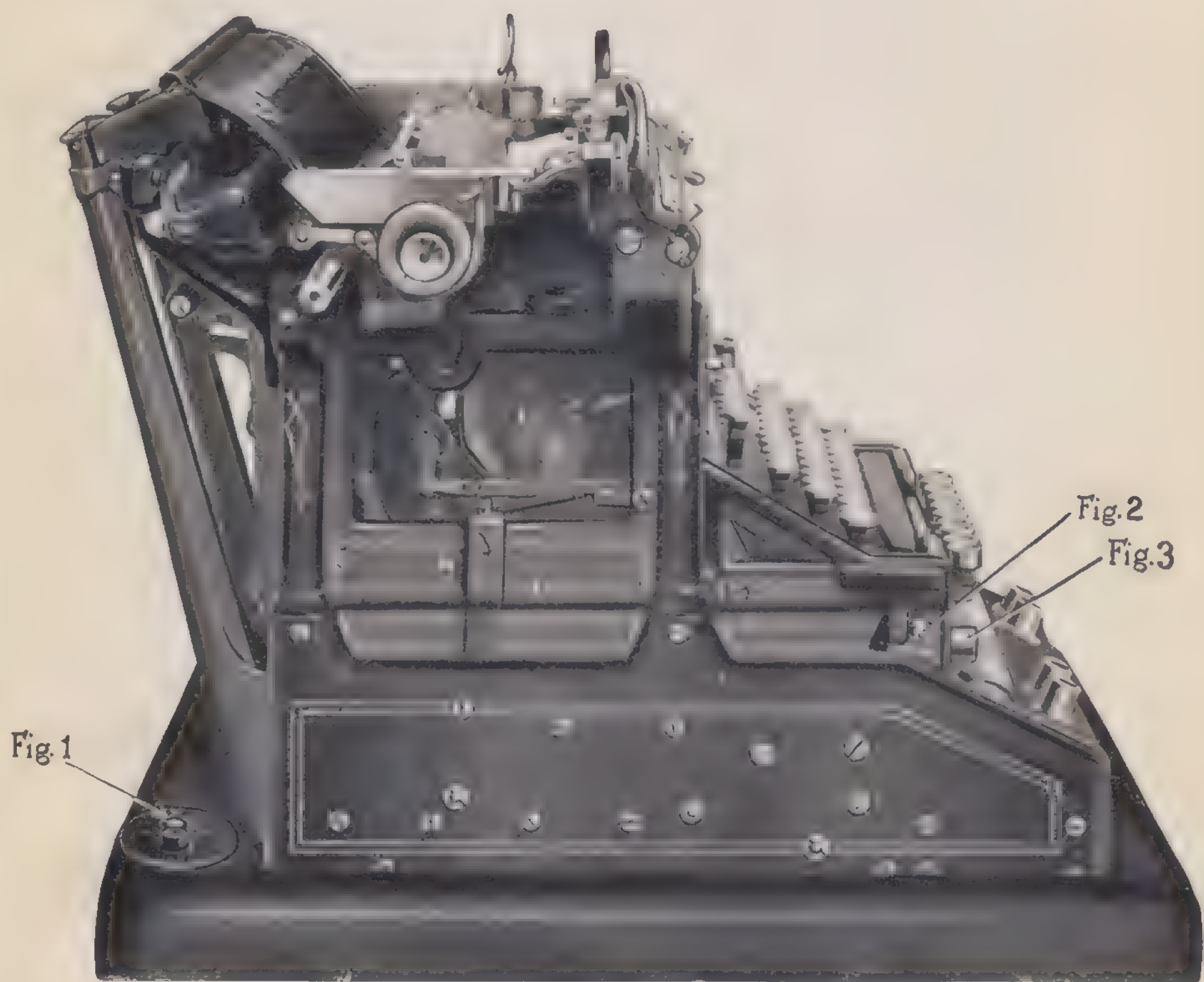


PLATE 5



## SECTION VII

### TO SET COLUMN SELECTORS

1. The power must be shut OFF, black button down (Plate 5, Figure 1) and the Disconnect Lever over "ON" (Plate 2, Figure 10).
2. All the necessary Tabular Stops should be in place before any attempt is made to set Column Selectors.
3. Tabulate to Decimal Point Position in column in which it is desired to Add or Subtract.
4. Tip Paper Table Forward (Plate 6, Figure 1), take proper Selector, hold in a vertical position so that the roll on upper end is to the rear (Plate 6, Figure 2) and slotted end is on Selector Rack Bracket Rod (Plate 6, Figure 4).
5. Let Selector rest against top of Selector Bracket so that the roll fits in the curved notch on the front edge of Bracket (Plate 6, Figure 3).
6. Move Carriage to the right to allow the Selector to drop from the Bracket to the rear Selector Rod.
7. Be sure that tooth of Selector engages teeth on rear Selector Rod. Selector should drop easily into place; if necessary, move slightly. **DO NOT FORCE IT.**
8. Tabulate to Decimal Point Position. If Selector has been correctly set the mark on the Selector will align with the mark on front of Selector Bracket. The Numeral Keys should lock when in this position.

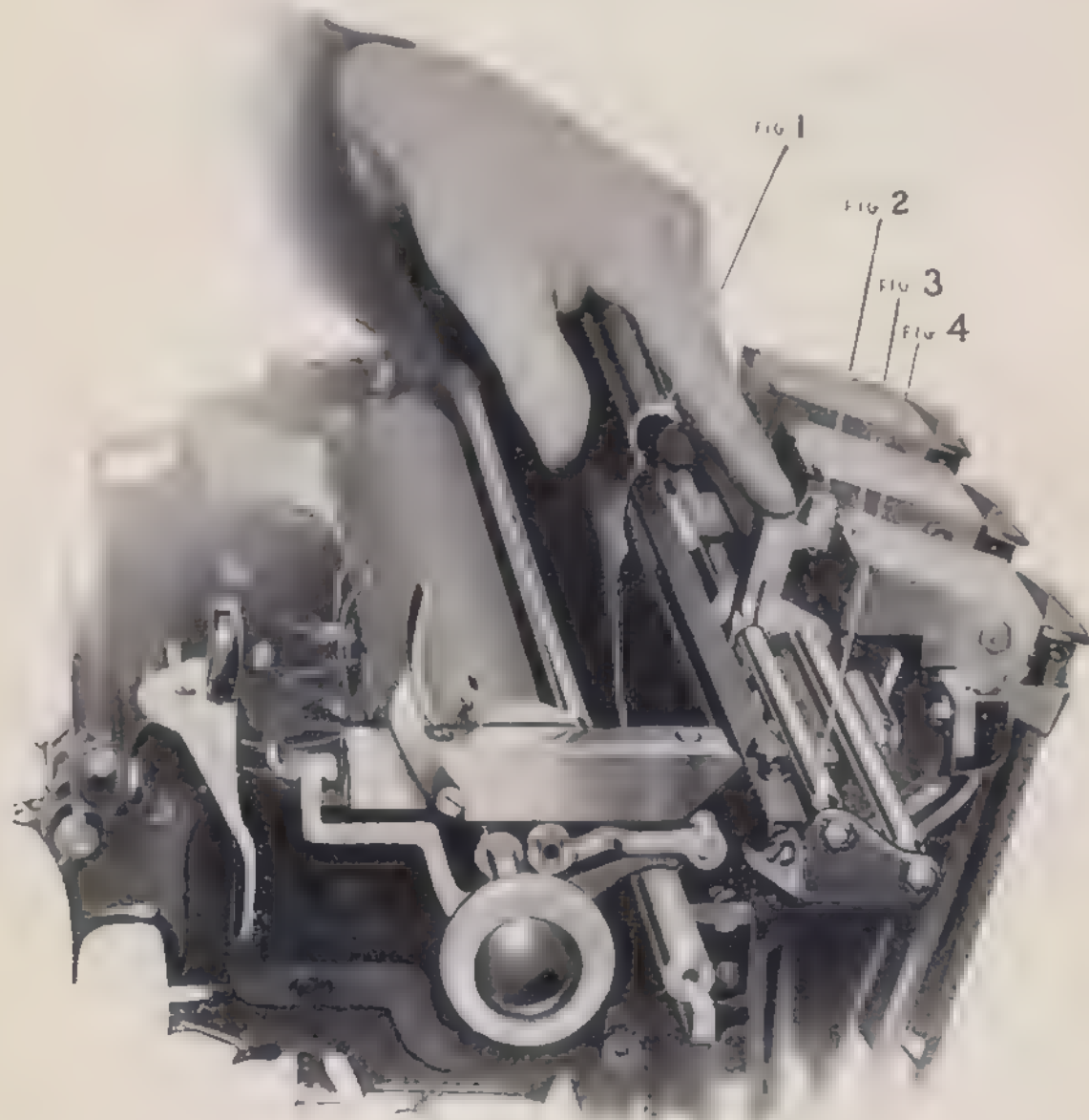


PLATE 6



## SECTION VIII

### TO SET COLUMN SELECTORS FOR COMPUTING SIMULTANEOUSLY IN MORE THAN ONE REGISTER

1. Tabulate to Decimal Point Position in column in which it is desired to Add or Subtract.
  2. Set the proper numbered Selector for each Register in which the computation is to be made as instructed in Section VII. Also see (Plate 8).
  3. Move Carriage to the right to allow Selectors to drop from the Brackets to the rear Selector Rod.
  4. Read Paragraphs 7 and 8 in Section VII.
- To test the proper setting of Selectors see instructions in Section IX.

## SECTION IX

### TO DETERMINE PROPER SETTING OF SELECTORS

1. See that all Registers are clear.
2. Press Elimination Key in Register or Registers (Plate 2, Figure 14) and strike Motor Bar (Plate 2, Figure 11).
3. Tabulate to the Tenths (\$10.00) position in the column for which one or more Selectors have been set.
4. Depress the Numeral One Key, strike the Motor Bar (Plate 2, Figure 11) and see what amount is added in the Register or Registers. If other than ten dollars (\$10.00) is added the Selector operating in the Register showing the wrong amount, is incorrectly set and should be moved one or more spaces to the left, if the amount is more than ten dollars and if less than ten dollars, one or more spaces to the right.

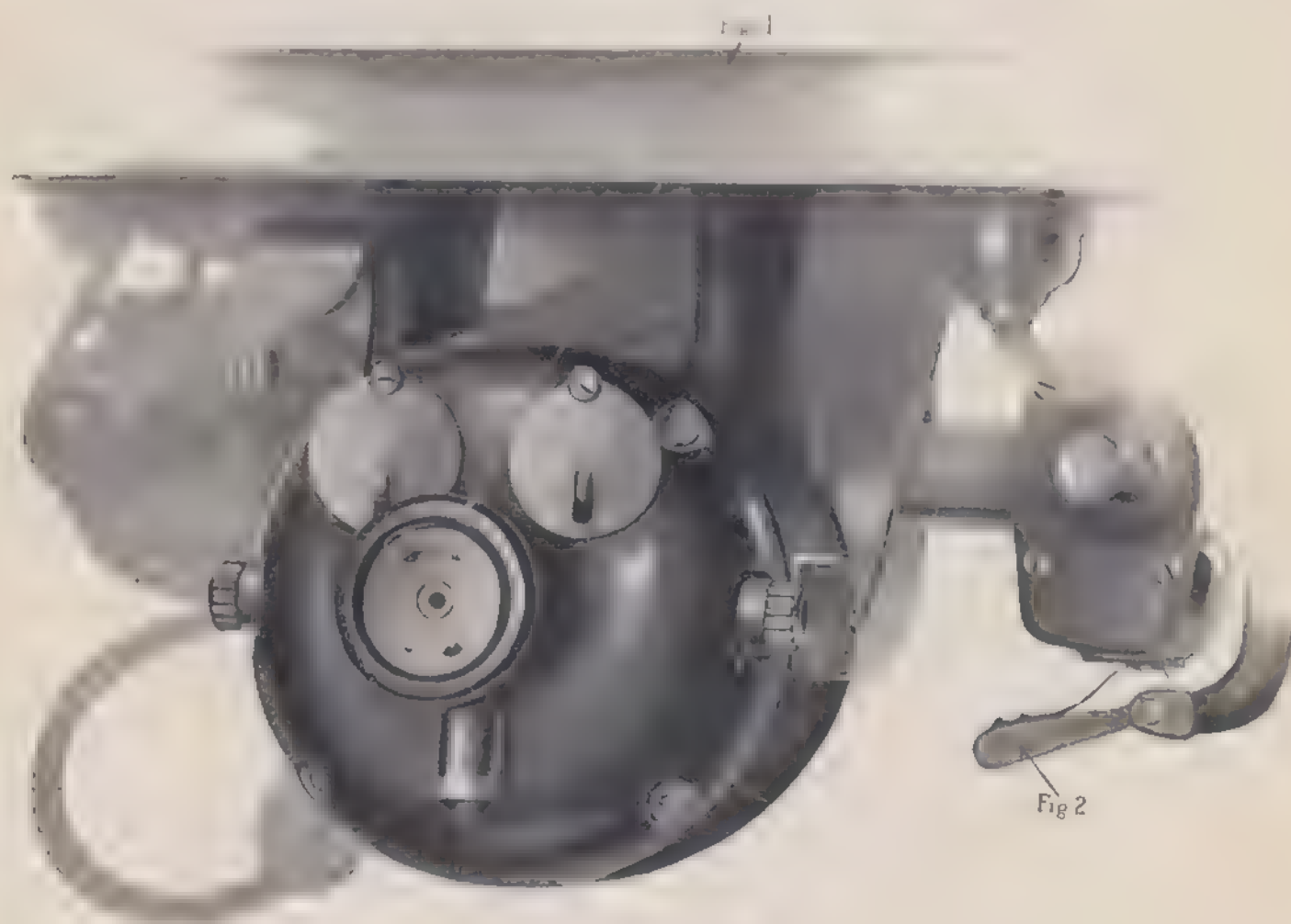


PLATE 7



## SECTION X

### MOTOR BAR

The Motor Bar (Plate 2, Figure 11) is used:

1. To release the Non-Add Lever (Plate 2, Figure 10).
2. To release the Subtraction Key (Plate 2, Figure 1).
3. To shift the ribbon to black after using red.
4. To unlock Numeral Keys after using Elimination Key (Plate 2, Figure 14).
5. To Actuate the computing mechanism to determine proper setting of Selectors (see Section IX).

### CARRIAGE RETURN BAR

The Carriage Return Bar (Plate 2, Figure 3) is used to return the Carriage to the beginning of a new writing line, automatically spacing the paper one, two, or three lines, depending on the setting of the "Line-space Adjuster Lever" (Plate 2, Figure 5).

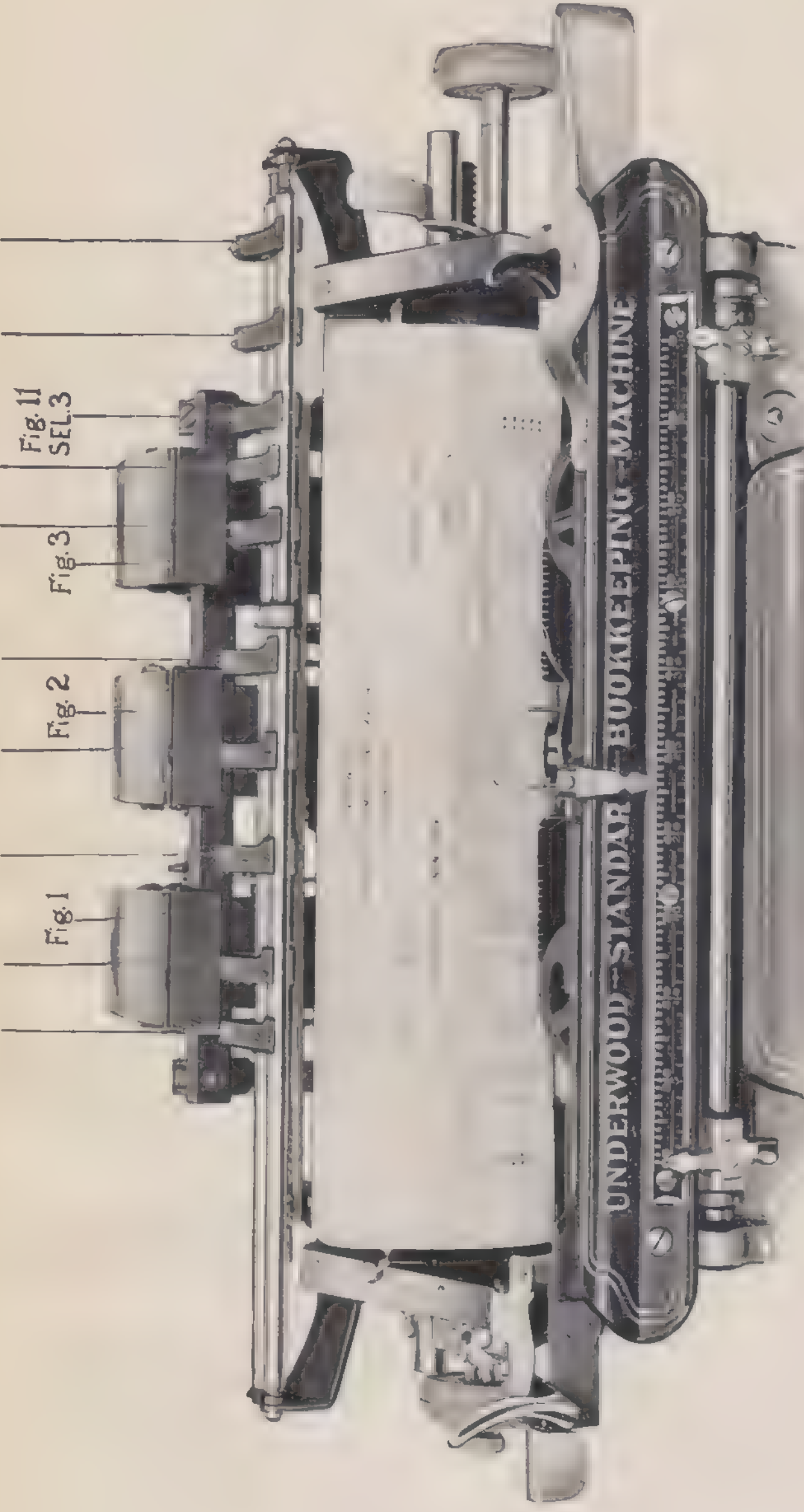
### AUTOMATIC CARRIAGE RETURN MARGINAL STOP

If it is desired to have the Carriage return automatically, set left hand Marginal Stop (Plate 8) one space beyond that occupied by the last character in the writing line. Upon writing the last character, the Carriage moves forward automatically one space, bringing the Pointer on the front of the Carriage in contact with the Marginal Stop. This trips the mechanism and causes the Carriage to be returned.

*Note*—Whenever the Carriage is returned to the beginning of a new line the Pointer rests against the right hand Marginal Stop. In this position the Platen or Cylinder can be turned forward but not backward. Move Carriage a few spaces to the left and the Platen can be turned freely in either direction.



Fig. 4 Fig. 5 Fig. 6 Fig. 7 Fig. 8 Fig. 9 Fig. 10 Fig. 12 Fig. 13  
SEL.2 SEL.1 SEL.1 SEL.2 SEL.2 SEL.3 SEL.2 SEL.3 SEL.3



## PLATE 8

This cut shows the paper table removed from the machine, so that the operation of the various Selectors in the Selector Brackets Nos. 1, 2 and 3 may be better seen and understood. The position of the Selectors control, through the medium of the Selector Brackets, the adding and subtracting in the Registers.

*Application of Selectors "set up" for the "Double Computing Method Form" shown in the machine, is as follows:*

1. In proving balance column, Selector No. 2 Fig. 4 operates under Selector Bracket No. 2.
2. In Debit Column, Selectors Nos. 1, 2 and 3: Figs. 5, 7, and 9 operate under Selector Brackets 1, 2, and 3
3. Automatic Subtraction throws the mechanism into Subtraction in red, as

form is carried to Credit Column; and Selectors Nos. 1, 2 and 3: Figs. 6, 8 and 11 operate under Selector Brackets Nos. 1, 2 and 3.

4. Mechanism returns to Addition in Old Balance Column and Selector No. 3, Fig. 12 operates under Selector Bracket No. 3.

5. In Balance Column. Selectors Nos. 2 and 3: Figs. 10 and 13 operate under Selector Brackets Nos. 2 and 3.

*Results Obtained from "Double Computing Set Up."* At the end of the run, No. 1 Register shows an accumulation of the Debits or Credits posted,—Dr. and Cr. to be posted at separate operations—while Registers Nos. 2 and 3 cross compute balances at separate operations on each account affected, as a check against errors in picking up Old Balances. They are automatically cleared as each posting is completed.



### SUBTRACTION KEY

The Subtraction Key (Plate 2, Figure 1) shifts the mechanism to Subtraction when pressed in. To return to Addition press the Motor Bar (Plate 2, Figure 11).

The proper Ribbon Equipment on an Underwood Bookkeeping Machine is Bichrome—black and red. The machine will always print in red when subtracting, except in a column set up with a black Subtraction Stop.

### SUBTRACTION KEY LOCK

The Subtraction Key Lock (Plate 5, Figure 2) is for the purpose of locking the machine in continuous subtraction. To operate press in the Subtraction Key (Plate 5, Figure 3) with the thumb and at the same time push in the Subtraction Key Lock (Plate 5, Figure 2) with the index finger, remove pressure from Subtraction Key, thus locking machine in Subtraction. A slight pressure on the Subtraction Key restores this Key to its normal position. Press Motor Bar to return to addition.

### ELECTRIC SWITCH

On the back of the stand top, left hand side (Plate 5, Figure 1) is an Electric Switch for the purpose of shutting off the current when leaving the machine.

If electric power fails, Motor Bar not tripping when pressed, ascertain whether the Motor is “stalled” by turning Motor Hand Wheel (Plate 7, Figure 1), Revolving Motor Shaft in the direction indicated by the arrow (Plate 7). If shaft can be turned freely, the machine is not “tied up.” Shut off power, black button down (Plate 5, Figure 1) and send for a repairman to remedy the trouble. The Emergency Lever can now be used to finish your work. (See Emergency Lever, page 22.)

### TWO-COLOR RIBBON DEVICE

When it is desirable to write in red, in other than Adding or Subtracting zone, press Subtraction Key.



### STAR KEY

A Star Key (Plate 2, Figure 14) is placed directly below each Register. Depressing this key will print a Star ONLY when the Register above it is clear (0 000 000 00).

The Star cannot be printed if the machine is in subtraction, even though the Register is clear.

If the Star Key is pressed when the Motor is disconnected or power turned off the Star type-bar will not return to its normal position. **DO NOT TRY TO PULL THE TYPE-BAR BACK.** It will return to position when the current has been turned on or Emergency Lever used (see page 22).

It is customary in beginning vertical addition to print the Star in the Decimal Point position above the line of writing. After the total has been written and the Register cleared, the Star of the cleared Register should be printed immediately after the last figure. In cross column work print the Star in the column or margin space preceding the first item and immediately after the last figure in the line as soon as the Register is clear.

If, after writing a total shown in a Register, the Star Key cannot be depressed, it will be found that all the dial wheels in the Register do not stand at zero, indicating an error in transcription. To correct the error, read carefully "Correction of Errors," page 20.

### DISCONNECT OR NON-ADD LEVER

The Disconnect or Non-Add Lever (Plate 2, Figure 10) disconnects the computing mechanism when pulled forward.

To write figures (such as the figures of a Date, Folio Number, Bill Number, Order Number, Street Number, etc.) in adding or subtracting positions and not permit them to accumulate in the various Registers, the Disconnect or Non-Add Lever should be pulled forward before the writing starts. It is best, however, to avoid writing figures in these positions whenever possible.



This lever will remain in the forward position, with mechanism disconnected, until the Motor Bar (Plate 2, Figure 11) or Star Key (Plate 2, Figure 15) is depressed, either of which will return the Lever to its normal position and reconnect the computing mechanism.

**DO NOT FORGET** to press the Motor Bar or print the Star when you have finished writing.

### CREDIT BALANCE KEY

The Credit Balance Key (Plate 2, Figure 13) is used for writing Credit Balances in Accounts Receivable Ledgers and Statements.

As the Balance Columns in Ledger Posting and Statement Writing are set for subtraction in black, the operation of this Key will change the actuating mechanism to addition and shift the ribbon mechanism to red.

### ELIMINATION KEY

The Elimination Key (Plate 2, Figure 14) is pressed to correct errors before the last figure of an amount has been written. (If more than one register machine, press all Elimination Keys.) Erase the incorrect figures, trip the Motor Bar (Plate 2, Figure 11) unlocking the Numeral Keys, and write the correct amount.

It is best to press all Elimination Keys to make inoperative any amount that has been partly written and not yet accumulated in the Registers, by some one fingering the Numeral Keys during the temporary absence of the operator. Then trip the Motor Bar (Plate 2, Figure 11) to unlock Numeral Keys.

Where a number of Registers are working together it is necessary in some instances, to Add or Subtract in some and not in all. To do this, write the amount in the regular way but before writing the last figure in Units position depress and hold down the space bar, then strike the last figure in Units position. Press Elimination Key of the Register or Registers not to be affected and release space bar. The Motor will then cycle and the amount will appear in the Register or Registers where the Elimination Key or Keys have not been pressed.



### CORRECTION OF ERRORS

(After amount has been accumulated into the Registers)

#### *Addition*

Return the carriage and tabulate into position to rewrite the incorrect amount, push in the subtraction key (Plate 2, Fig. 1) and write the incorrect amount, which restores the original figures in the Registers. Then erase or mark "error" and write the correct amount, as shown in the Registers.

#### *Subtraction (Regular)*

Return the carriage and tabulate into position to rewrite the incorrect amount, add back this amount which restores the original amount in the Registers. Then erase or mark "error" and subtract the correct amount.

#### *Subtraction (Automatic)*

Return the carriage and tabulate into position to rewrite the incorrect amount, push the latch (Plate 9, Fig. 4) in and down and trip the motor bar, then write the incorrect amount which restores the original figures in the Registers. Return the carriage and tabulate into position; release the latch, erase or mark "error" as desired and write the correct amount.

#### *Debit Balance*

Return the carriage and tabulate into position to rewrite the incorrect amount, push in Credit Balance key (Plate 2, Fig. 13) and rewrite the incorrect amount, which restores the original figures in the Register. Return the carriage and tabulate into position; erase or mark "error" as desired, and write the correct amount.

#### *Credit Balance*

Return the carriage and tabulate into position to rewrite the incorrect amount. Write the incorrect amount, which restores the original figures in the Registers. Return the carriage and tabulate into correct position. Press in Credit Balance key and write correct amount.

### NON-PRINT KEY

The Non-Print Key (Plate 2, Figure 9) when depressed, prevents printing but does not prevent the accumulation of amounts in the Registers.

To set Non-Print Key, press firmly on front edge. To release, press firmly on rear edge.

NEVER use the Non-Print Key to correct errors in your daily work.



### SUB TOTALS

To print a sub total in black, tabulate to an adding position, pull the Non-Add or Disconnect Lever forward (Plate 2, Figure 10), copy total from Register and press Motor Bar to reset Non-Add or Disconnect Lever.

To print a sub total in red, pull the Non-Add or Disconnect Lever forward, press Subtraction Key and proceed to operate as above.

This operation does not affect the amount in the Register, which can be further added to or subtracted from, as desired.

### THE TRANSMISSION CAM LEVER

The Transmission Cam Lever is readily found underneath the machine on the left hand side from the front (Plate 7, Figure 2). It is used to disconnect the actuating mechanism and allows the use of the Emergency Lever or Crank Arm (Plate 9, Figure 1) when Electric Power for any reason is not available.

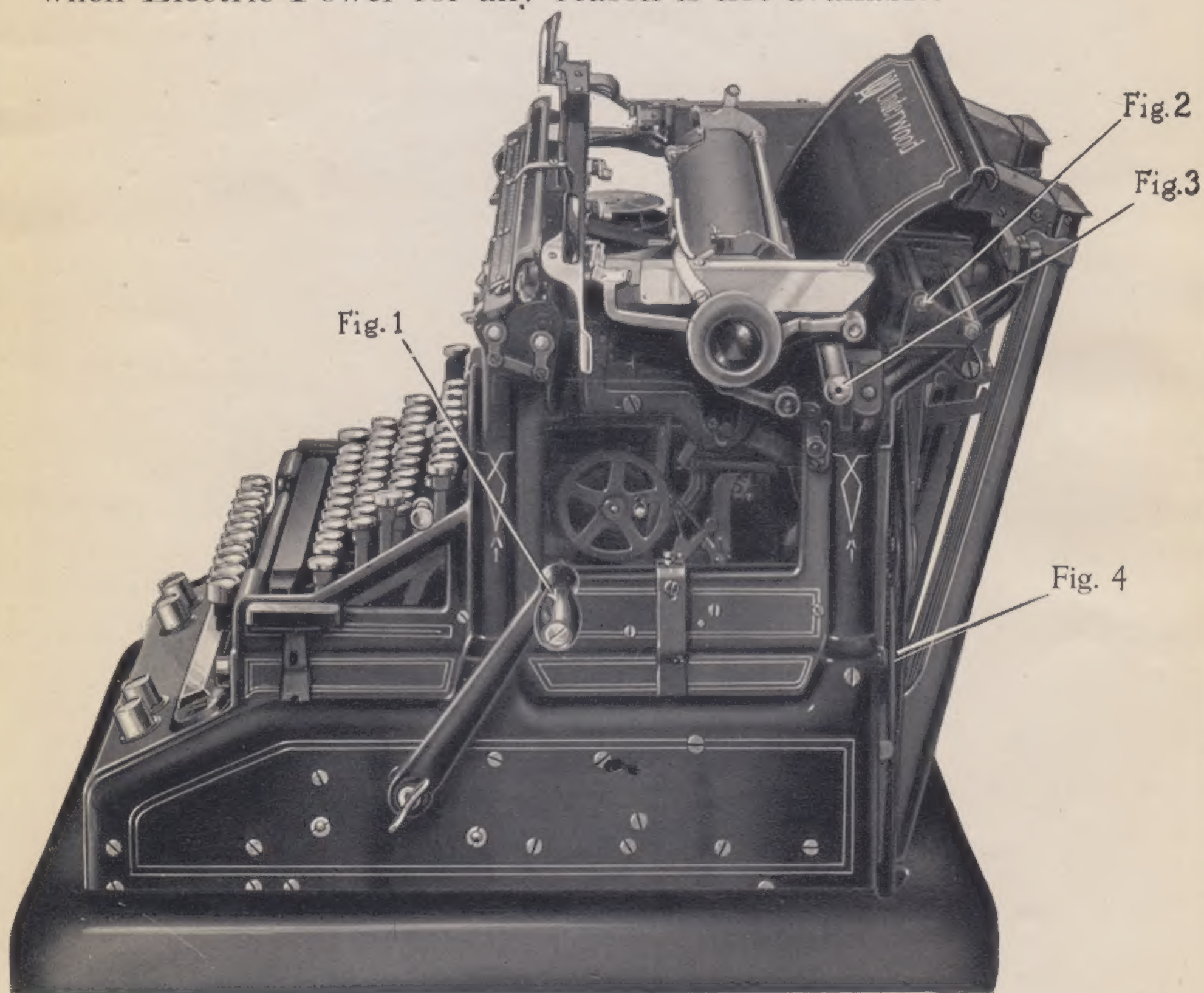


PLATE 9



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Place the spools in the cups, being sure the ribbon winds on and off the spools from the front, as illustrated (Plate 10). The small pins in the bottom of the cups must enter the holes in the ribbon spool hubs. Pass the ribbon through the openings in the side of the cups, in front of the rollers and through the slots in the reversing levers.

By drawing the handles on the cups forward the rollers and reversing levers are brought into an accessible position and the ribbon can be inserted easily.

Place the ribbon back of the ribbon guide, then bring each side forward in front of the guide pins, making small loops in the ribbon, similar to the letter S. It should then be lifted over the pins on each side and allowed to rest in the openings between the guide and pins.

#### CLEANING THE TYPE

Remove Type Bar Cover Plate by loosening thumb nut (Plate 2, Figure 8) one turn, slide Cover Plate to right as far as it will go, and pull forward on left end.

The type are very accessible and should be kept clean at all times. Using a stiff brush, such as is furnished with the machine, with a forward motion, will remove all sediment in a few moments.

#### OILING

The Way Rod (Plate 9, Figure 3), extending across the rear of machine on which the Carriage moves, and the Selector Rods (Plate 9, Figure 2) should not be allowed to get rusty. A touch of oil on the Selector Pawls (Plate 4, Figure 1), every week or so, will keep them working efficiently.

#### DONT'S

Do not change adjustments.

Do not oil type bar bearings.

Do not leave the machine uncovered at night.

Do not leave machine without switching off power.

Do not allow anyone to repair or adjust the machine unless credentials from Underwood Typewriter Company are shown.

When moving the machine, do not push; always pull it.

If numeral type bar locks do not pull it back into place, depress key full depth.

Do not allow pins, paper clips, rubber bands, etc., to fall between the keys of the keyboard.



